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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1- 5 (canceled)

Claim 6. (currently amended) A hot gas filtration apparatus comprising:

a vessel;

a plurality of filter elements mounted within said vessel and positioned such that hot gas flows through said filter elements, each of said filter elements having a porous body. The hot gas filtration apparatus of claim 1, wherein the porous body includes an outer surface and an inner surface, said porous body forming a substantially closed figure having a closed end and an open end, said open end formed to be coupled to a support structure, said porous body defining a channel beginning at said open end and terminating at said closed end through which a filtered clean gas can flow into the clean gas side of a hot gas clean up system, said porous body defining a flange at said open end for attachment to said support structure;

a first catalytic layer on surfaces within the porous body; and

a porous membrane positioned on said outer surface of said porous body; and said membrane including a second catalytic layer.

Claim 7 (canceled)

Claim 8. (currently amended) The hot gas filtration apparatus of claim 7, further comprising:

a porous membrane positioned on said inner surface of said porous body; and
said membrane including a third catalytic layer.

Claim 9. (original) The hot gas filtration apparatus of claim 8, wherein said second and third catalytic layers include different catalysts.

Claim 10 (original) The hot gas filtration apparatus of claim 6, further comprising:

a porous membrane positioned on said inner surface of said porous body; and
said membrane including a second catalytic layer.

Claims 11 – 12 (canceled)

Claim 13. (currently amended)

A hot gas filtration apparatus comprising:

a vessel;

a plurality of filter elements mounted within said vessel and positioned such that hot gas flows through said filter elements, each of said filter elements having a porous body; and

a catalytic layer on surfaces within the porous body. ~~The hot gas filtration apparatus of claim 1,~~ wherein the catalytic layer comprises:

a perovskite mixed catalyst of the composition ABO_3 ;

wherein A includes one of an alkali, alkaline earth, rare earth, and lanthanide elements; and

wherein B includes an element from one of groups IB, IVB, VB, VIB, VIIB, and VIII.

Claim 14. (original) The hot gas filtration apparatus of claim 13, wherein A includes one of lanthanum, strontium, and a mixture of lanthanum and strontium; and

wherein B includes one of cobalt, nickel, copper, and manganese.

Claim 15. (currently amended)

A hot gas filtration apparatus comprising:

a vessel;

a plurality of filter elements mounted within said vessel and positioned such that hot gas flows through said filter elements, each of said filter elements having a porous body; and

a catalytic layer on surfaces within the porous body. ~~The hot gas filtration apparatus of claim 1,~~ wherein the catalytic layer comprises:

a perovskite structure of the form $[(A^1_{1-x}A^2_x)B^1_{1-y}Me_y]O_3$;

wherein A^1 , A^2 , and B^1 each comprises a metal; and

wherein Me includes one of Ru, Os, Rh, Ir, Pd, and Pt.

Claim 16. (currently amended)

A hot gas filtration apparatus comprising:

..... a vessel;
..... a plurality of filter elements mounted within said vessel and positioned such
that hot gas flows through said filter elements, each of said filter elements having a porous
body; and

..... a catalytic layer on surfaces within the porous body~~The hot gas filtration apparatus of claim 1,~~ wherein the catalytic layer comprises:

a perovskite structure of the form $(A_1)_m(A_2)_n(B_1)_p(B_2)_qO_3$;

wherein A_1 includes a rare earth element;

wherein A_2 includes one of Sr, Ba, and Pb;

wherein B_1 includes one of Ni, Co, Fe, Zn, Cu, and Mn; and

wherein B_2 includes one of Ru, Os, Ir, Pt, Ti, Mo, W, Nb, Mn, Ta, and Sb.

Claim 17. (currently amended)

A hot gas filtration apparatus comprising:

..... a vessel;
..... a plurality of filter elements mounted within said vessel and positioned such
that hot gas flows through said filter elements, each of said filter elements having a porous
body; and

..... a catalytic layer on surfaces within the porous body~~The hot gas filtration apparatus of claim 1,~~ wherein the catalytic layer comprises:

a zeolite of the form $(A)[(B)O_2]_n \cdot xH_2O$;

wherein A includes one of Na_2 , K_2 , Ca, and Ba; and

wherein B includes one of Al and Si.

Claim 18. (currently amended)

A hot gas filtration apparatus comprising:

..... a vessel;
..... a plurality of filter elements mounted within said vessel and positioned such
that hot gas flows through said filter elements, each of said filter elements having a porous
body; and

..... a catalytic layer on surfaces within the porous body~~The hot gas filtration apparatus of claim 1,~~ wherein the catalytic layer comprises a spinel of the form $(A)(Al)O_x$, and wherein A includes one of Mg, Fe, Zn, and Mn.

Claim 19. (canceled)